

# Homework 36H

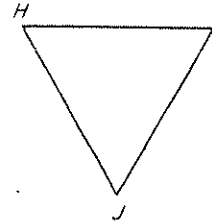
## Two Column Proofs

Name: \_\_\_\_\_  
Period: \_\_\_\_\_ Date: \_\_\_\_\_

In Exercises 1-4, complete the proof.

1. GIVEN:  $HI = 9$ ,  $IJ = 9$ ,  $\overline{IJ} \cong \overline{JH}$

PROVE:  $\overline{HI} \cong \overline{JH}$

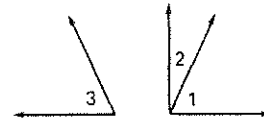


| Statements                             | Reasons                             |
|--|-------------------------------------|
| 1. $HI = 9$                            | 1. ?                                |
| 2. $IJ = 9$                            | 2. ?                                |
| 3. $HI = IJ$                           | 3. ?                                |
| 4. ?                                   | 4. Definition of congruent segments |
| 5. $\overline{IJ} \cong \overline{JH}$ | 5. ?                                |
| 6. $\overline{HI} \cong \overline{JH}$ | 6. ?                                |

$\Phi = \angle$

2. GIVEN:  $\angle 3$  and  $\angle 2$  are complementary.  
 $m\angle 1 + m\angle 2 = 90^\circ$

PROVE:  $\angle 3 \cong \angle 1$



| Statements   | Reasons |
|--|---------|
| 1. $\angle 3$ and $\angle 2$ are complementary.    | 1. ?    |
| 2. $m\angle 1 + m\angle 2 = 90^\circ$              | 2. ?    |
| 3. $m\angle 3 + m\angle 2 = 90^\circ$              | 3. ?    |
| 4. $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 2$ | 4. ?    |
| 5. $m\angle 1 = m\angle 3$                         | 5. ?    |
| 6. $\angle 1 \cong \angle 3$                       | 6. ?    |

3. GIVEN:  $AL = SK$

PROVE:  $AS = LK$

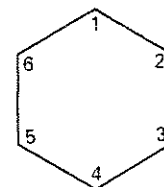


| Statements             | Reasons |
|------------------------|---------|
| 1. $AL = SK$           | 1. ?    |
| 2. $LS = LS$           | 2. ?    |
| 3. $AL + LS = SK + LS$ | 3. ?    |
| 4. $AL + LS = AS$      | 4. ?    |
| 5. $SK + LS = LK$      | 5. ?    |
| 6. $AS = LK$           | 6. ?    |

4. GIVEN:  $m\angle 4 = 120^\circ$ ,  $\angle 2 \cong \angle 5$ ,  $\angle 4 \cong \angle 5$

PROVE:  $m\angle 2 = 120^\circ$

$\Phi = \angle$



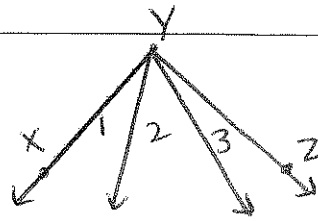
| Statements  | Reasons                           |
|---|-----------------------------------|
| 1. $m\angle 4 = 120^\circ$ , $\angle 2 \cong \angle 5$ ,<br>$\angle 4 \cong \angle 5$ | 1. ?                              |
| 2. $\angle 2 \cong \angle 4$  | 2. ?                              |
| 3. ?  | 3. Definition of congruent angles |
| 4. $m\angle 2 = 120^\circ$  | 4. ?                              |

**Homework 36H**  
**Two Column Proofs**

Name: \_\_\_\_\_  
 Period: \_\_\_\_\_ Date: \_\_\_\_\_

Show all your work or LASALLE!

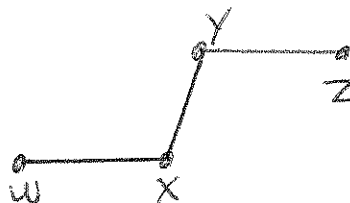
1. Given:  $\angle 1 = 20^\circ$   
 $\angle 2 = 40^\circ$   
 $\angle 3 = 30^\circ$



Prove:  $\angle XYZ$  is a right angle.

| Statements | Reasons |
|------------|---------|
|            |         |
|            |         |
|            |         |
|            |         |
|            |         |
|            |         |

2. Given:  $WX \cong XY$  and  $XY \cong YZ$



Prove:  $WX \cong YZ$

| Statements | Reasons |
|------------|---------|
|            |         |
|            |         |
|            |         |
|            |         |
|            |         |